In the Specification

On page 5, line 6:

[0007] Therefore, while the above-described imaging technique includes fat suppression and does not unduly extend scan times, non-homogeneous fat suppression and ringing may be observed within reconstructed images. That is, while using a ~~spectrally-selective~~ spectrally-selective inversion pulse 1 with a centric encoding imaging sequence reduces scan times, it may also result in non-homogeneous fat saturation and is prone to the presence of ringing artifacts in reconstructed images.

On page 15, line 18:

[0032] The flip angle of the SPECIAL inversion pulse 82 is automatically adjusted such that magnetization of fat within the ROI or VOI is at or near a null point at the filling of the center of k-space ~~78~~ 76. In one embodiment of the invention, the first *Kz* lines acquired after the SPECIAL inversion pulse (at or near 100 degrees) are placed very close to the center of k-space for the ROI or VOI 78, which provides good SNR and CNR. As such, in contrast to known fat suppression techniques, data is acquired before fat magnetization reaches its null point 84.

On page 17, line 18:

[0035] Once partial zero-filling, as described with respect to Fig. 3, is complete, segmented data acquisition is performed. Figure 4 illustrates segmented acquisition in the slice direction using a SPECIAL pulse applied with a 3D FGRE sequence. Specifically, slice-encoding is used to fill the non-zero-filled k-space in a segmented fashion. That is, for every phase encoding view (*Ky*=1 line to *Ky*=*k* line), a first SPECIAL pulse 90 is applied followed by a set number of α pulses 92 to acquire only *m Kz* lines before applying a subsequent SPECIAL pulse 94 and α pulses 92. This technique is repeated *n* times (segments), which may be in an interleaved manner, until all *Kz* lines, from the 1st to the n^{th} k-space segment, are filled. That is, for each *Ky* line, *m* X *n* data may be filled. Therefore, the above-described imaging technique combines partial zero-filling in the slice direction and segmented sequential acquisition with spectrally selective inversion recovery pulses. This technique results in homogeneous fat suppression as well as reduced ringing and edge enhancement in reconstructed images.

On page 19, lines 12, 15 and 17:

[0039] It is contemplated that the segmented acquisition may be optimized based on clinical applications. For example, only a few number of segments are needed for liver application because of its breathholding requirement. On the other hand, for breast imaging that does not require breathholding, the number of segments is played out more often than during liver imaging. ~~The number~~ A number of segments may also be played out to suppress the breast tissue that is mostly composed of fat substances. Image quality is high and little or no ringing artifacts or edge enhancements are present within reconstructed images.